

Sub B3
A2
8. (Amended) A method of producing a semiconductor wafer, comprising the steps of:
producing a single crystalline semiconductor ingot by removing an OiSF ring by means of moving the OiSF ring from a center of a single crystalline semiconductor growth axis to a circumference and by extending a first area and a second area in which delta (O) as oxygen concentration difference between initial oxygen concentration and oxygen concentration after heat treatment in N₂ ambience at 1000 °C for 64 hours, is increased more than other areas;
providing a wafer by slicing the single crystalline semiconductor ingot;
carrying out a heat treatment on the wafer at a temperature equal to or higher than 1200 °C; and
carrying out a rapid thermal annealing on the wafer at a temperature equal to or lower than 800°C for a period having a duration of two minutes or less.

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17. (Amended) A method of growing an ingot, comprising the steps of:
accelerating a speed of growing from a melt-down silicon to a single crystalline silicon ingot;
maintaining a temperature gradient distribution from a central part to a circumferential part of the ingot at a growing interface between the melt-down silicon and the ingot grown by crystallization;
forming an OiSF ring at the circumferential part by moving the OiSF ring from a center of a single crystalline semiconductor growth axis to a circumference; and

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extending an area in which delta (O_i) is increased as compared to that of other areas, wherein the delta (O_i) is a difference between an initial oxygen concentration and oxygen concentration after heat treatment with a thermal history.

18. (Amended) The method of growing an ingot according to claim 17, wherein the heat treatment with the thermal history is carried out at 1000°C for 64 hours in a N_2 ambience.

19. (Amended) The method of growing an ingot according to claim 17, wherein the area in which delta (O_i) is increased is formed to occupy 20 to 90% of a diameter of the ingot.
